Pelvic Organ Prolapse: Considerations in Surgical Management

NYU Case of the Month, April 2017

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A 58-year-old woman presented with a 2-year history of a bothersome vaginal bulge. She was married, continent, and sexually active. She managed the bulge with a self-maintained vaginal pessary that significantly improved her symptoms.

Two years later, she reported dissatisfaction with a chronic vaginal discharge and interference of the pessary with her sexual function. She also reported intermittent constipation and an intermittent sensation of soft tissue protruding from her anus, both with and without defecation. She reported no fecal incontinence. She desired surgical intervention for her pelvic organ prolapse because she leads an active lifestyle, works full time, and engages in regular, high-impact exercise.

Evaluation

Pelvic Examination

Examination revealed mild vaginal atrophy and moderate urethral hypermobility; no incontinence was demonstrated with cough or Valsalva maneuvers. No vaginal ulcerations related to chronic pessary use were seen on examination with a speculum (Figure 1).

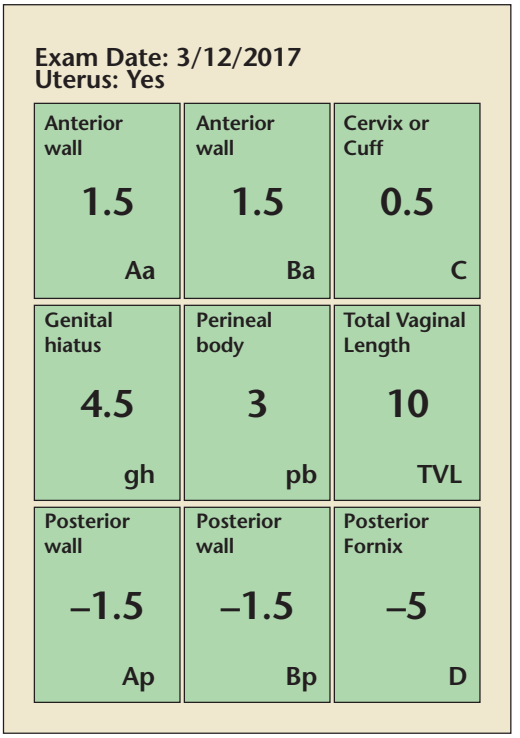

Figure 1. Pelvic organ prolapse quantification system.

Pelvic Organ Prolapse Quantification System

Examination of the patient's anus revealed a full-thickness rectal prolapse with Valsalva maneuver.

Preoperative Gynecologic Evaluation

Results of a Papanicolaou smear were negative for intraepithelial lesion or malignancy, and human papillomavirus (HPV) was not detected. Pelvic ultrasound revealed an atrophic uterus (5 cm), endometrial thickness of 2 mm, and atrophic ovaries without masses.

Preoperative Colorectal Evaluation

Preoperative colorectal evaluation revealed complete rectal prolapse (external) on examination with straining, protruding approximately 3 cm from the anus. The patient had normal anal sphincter tone without anal or rectal mass. Screening colonoscopy revealed mild erythema and venous congestion of the distal rectal mucosa consistent with rectal prolapse. The remainder of the colon to the ileocecal valve was unremarkable.

Management

The patient requested definitive surgical management of symptomatic pelvic organ prolapse. Management options include vaginal prolapse repair with concurrent transanal excision of rectal prolapse, minimally invasive (ie, robotic or laparoscopic) abdominal prolapse repair with concurrent rectopexy, or a vaginal obliterative procedure (ie, colpocleisis) with concurrent transanal rectal prolapse resection.

The patient elected a definitive and restorative pelvic organ prolapse repair with robotic supracervical hysterectomy, bilateral salpingectomy, sacrocolpopexy, and cystoscopy—and concurrent rectopexy performed by the colorectal surgeon.

The 3-hour surgery was uncomplicated, with minimal blood loss (estimated at 50 mL). The patient was discharged home on postoperative day 1 after successfully passing a voiding trial. She was evaluated 4 weeks after surgery and reported feeling well, without abdominal, vaginal, or rectal pain. Her bowel movements were regular and she reported improved defecation. She denied stress or urge incontinence. She reported complete resolution of both her vaginal bulge symptoms and her anal prolapse symptoms.

Comment

Considerations in Prolapse Repair

Pelvic organ prolapse is a disorder for which there are numerous risk factors, including pregnancy, childbirth, prior pelvic surgery (eg, hysterectomy), obesity, menopause and aging, connective tissue disorders, and, possibly, genetics. It is estimated that up to 50% of parous women will have prolapse of one or more pelvic organs.[1] Pelvic organ prolapse can involve any of the pelvic organs and vaginal compartments, to varying degrees, with accompanying symptoms related to each of these organs.

Posterior compartment laxity can lead not only to rectocele and defecatory dysfunction, but also to rectal prolapse, often associated with chronic constipation. Rectal prolapse can be further classified as internal, with intussusception of the descending or sigmoid colon into the lower colonic segment, or external, with protrusion of the rectum through the anus.

It is critical to thoroughly assess preoperative urinary, bowel, sexual, and vaginal symptoms in order to strategize treatment options and set realistic postoperative and long-term goals. A prolapse history needs to include questions about voiding symptoms, including both stress and urge incontinence; localized vaginal symptoms such as pressure, bulge, heaviness, bleeding, and dyspareunia; defecatory symptoms such as constipation, manual splinting, fecal urgency, fecal incontinence, bleeding, and tenesmus; and sexual symptoms such as coital pain, incontinence, bleeding, and vaginal atrophy symptoms. Lifestyle factors also need to be taken into account when discussing options for prolapse repair. These factors include age, menopausal status, type of exercise and activity, sexual activity, body image, and cultural factors; each of these may have an impact on choice of surgery. Shared decision making between surgeon and patient is essential, particularly for a largely quality-of-life condition.[2]

Surgical correction of pelvic organ prolapse is aimed at restoring anatomy and function, as well as improving symptoms. In addition, the pelvic surgeon must be aware of de novo symptoms that can occur as a result of pelvic organ prolapse repair. Stress urinary incontinence can be present with pelvic organ prolapse, but can also be unmasked with correction of prolapse and reduction of cystocele. Patients must be screened for occult stress incontinence with prolapse reduction preoperatively if they do not report clinical stress incontinence. They can then be offered management of either clinical or occult stress incontinence at the time of prolapse surgery.

Preoperative Evaluation

In patients considering pelvic organ prolapse repair, the following basic genitourinary assessments should be conducted:

1. Preoperative screening for stress urinary incontinence, either with pessary reduction or with urodynamic evaluation with prolapse reduction

2. Menopausal status and both personal and family history of gynecologic malignancies that influence risk reduction strategies for salpingectomy and/or oophorectomy
3. Papanicolaou smear results, with HPV screening
4. Uterine size and pathology (eg, uterine fibroids) based on bimanual examination and/or pelvic ultrasound, which may influence route of repair
5. Colorectal evaluation if there is significant defecatory dysfunction, particularly if this dysfunction is out of proportion to the physical examination findings, or if rectal prolapse is suspected.

Surgical Options

Options for surgical treatment of pelvic organ prolapse include both restorative and obliterative procedures. A colpocleisis (obliterative vaginal procedure) is generally reserved for older women who are no longer sexually active. This choice requires proper patient selection and counseling, but has been associated with high success rates and high rates of patient satisfaction.[3-5]

Restorative procedures for pelvic organ prolapse include vaginal repairs and abdominal repairs (open and minimally invasive). When apical prolapse is a significant component (eg, uterine prolapse), the standard prolapse repairs include a hysterectomy in the postmenopausal woman. In the past decade, select procedures for apical prolapse in younger, premenopausal women have involved uterine-sparing techniques such as sacrospinous hysteropexy (vaginal)[6] and sacrohysteropexy (abdominal).[7-9] Long-term, prospective results for uterine-sparing techniques are lacking at this time; however, short-term results are promising.

Successful repair of pelvic organ prolapse in the majority of cases includes a suspension of the apex (eg, uterus or posthysterectomy vaginal cuff). According to the International Continence Society, the apex is the keystone of pelvic organ support. Without adequate support of the apex, surgical repair is likely to fail for both the anterior and the posterior compartments because they remain exposed to intra-abdominal forces that push them toward the introitus.[10] The pelvic surgeon must be proficient at assessing the vaginal apex preoperatively in order to offer the most durable and efficacious prolapse repair. Choice of prolapse repair is influenced not only by patient factors, but also by surgeon training and experience.

Abdominal Prolapse Repair

Abdominal sacrocolpopexy, using synthetic mesh as an interposition between the cervix or vaginal cuff and sacrum, is an excellent option for apical prolapse repair, with level 1 evidence supporting its efficacy and long-term durability. In addition, there is level 1 evidence supporting a higher anatomic efficacy with abdominal sacrocolpopexy compared with vaginal prolapse repairs.[10] This has been studied both in randomized controlled trials comparing vaginal and abdominal routes of prolapse repair and in a Cochrane review.[11] Abdominal sacrocolpopexy can be performed as a traditional open surgery or as a minimally invasive surgery, with either robotic or laparoscopic assistance. It primarily addresses the vaginal apex, but also corrects anterior and posterior compartment prolapse, depending on the degree of vaginal wall dissection and mesh fixation in each of these compartments. Compared with vaginal routes of repair, sacrocolpopexy is associated with higher morbidity and higher cost, but less dyspareunia. It can be an ideal approach for a patient for whom a prior vaginal apical suspension surgery has failed.

Vaginal Prolapse Repair

Vaginal approaches to apical prolapse repair include sacrospinous ligament suspension (SSLS), uterosacral ligament suspension (USLS), and McCall culdoplasty. Following the US Food and Drug Administration notifications about the use of transvaginal synthetic mesh for prolapse repair in 2011, the majority of pelvic surgeons have steered away from vaginal mesh repairs and turned back to native tissue repairs. The two most popular techniques used for vaginal apical suspension are the SSLS and USLS. The SSLS procedure is associated with higher rates of anterior compartment recurrence, ranging between 6% and 28.5%.[10] The USLS allows the surgeon to tailor vaginal depth and length depending on the level of suspension along the uterosacral ligament. USLS carries a higher risk of ureteral injury and, therefore, requires more extensive surgeon experience.

There is no compelling evidence supporting any one route of vaginal repair with native tissue. Both anterior and posterior compartment repairs can be made during vaginal apical suspension surgery to further correct cystocele and rectocele. Finally, as with any prolapse repair, a midurethral sling procedure can be performed for women with clinical stress urinary incontinence or occult stress incontinence (demonstrated with pessary trial or urodynamic evaluation with prolapse reduction).

Obliterative Prolapse Surgery

Obliterative vaginal procedures are an excellent option for alleviating pelvic organ prolapse symptoms

and improving quality of life. Patients must be carefully selected and no longer desire maintenance of sexual function. These procedures include LeFort colpocleisis (uterus present), partial colpocleisis (after hysterectomy), and complete colpectomy. In all three procedures, levator myorrhaphy is recommended to reduce the diameter of the genital hiatus. These procedures can be performed as outpatient surgery and can be accomplished, in some cases, under local or regional anesthesia, making them optimal for elderly or frail women. Success rates have been reported as high as 100%, with high patient satisfaction and low rates of regret regarding loss of sexual function.[10]

For women with uteri, adequate preoperative screening with Papanicolaou smear and pelvic imaging is essential before planning an obliterative procedure. The surgeon must be confident that no significant pathology exists prior to vaginal closure. A LeFort colpocleisis involves excision of rectangular strips of vaginal mucosa anteriorly and posteriorly, with the creation of two lateral tunnels to allow cervical/uterine secretions to drain. Sequential closure of the vagina is then accomplished by suturing the perivesical fascia to the prerectal fascia with levator myorrhaphy to close the genital hiatus. In women who have had a hysterectomy, colpocleisis is accomplished in the same manner without the creation of lateral tunnels but with complete vaginal closure.

Concomitant Colorectal Surgery

With concomitant rectal prolapse, collaboration with a colorectal surgeon is ideal to offer patients corrective surgery for all vaginal compartments. Addressing the patient's pelvic complaints, which encompass vaginal, urinary, bowel, and sexual symptoms, will greatly improve patient satisfaction postoperatively, and can potentially reduce the need for future surgical procedures.

Rectopexy can be offered for the correction of rectal prolapse at the same time that a pelvic organ prolapse repair is being planned. The rectopexy can be accomplished via an open abdominal approach or a minimally invasive approach—with ventrally or posteriorly placed mesh, or with direct tacking of the bowel to the sacral promontory.

Several cohort studies, both retrospective and prospective, have reported on both functional and quality-of-life outcomes.[12-14] Lim and colleagues[12] reported on 29 patients who underwent open abdominal mesh sacrocolporectopexy to correct vaginal and rectal prolapse. No patient had developed recurrent rectal prolapse or intussusception postoperatively at 6 months. Watadani and colleagues[13] reported on 110 patients who underwent combined open mesh sacrocolpopexy and mesh rectopexy to correct combined middle and posterior compartment prolapse. Long-term follow-up was achieved in 53 patients (48%), with median follow-up of 29 months (range, 4-90 mo). Postoperatively, 82% of this cohort reported resolution of or improvement in constipation. None of the patients who completed follow-up reported a recurrence of either vaginal or rectal prolapse. Of these 53 patients, 70.6% reported satisfaction with the outcome of surgery.[13]

Conclusions

Optimal treatment of pelvic organ prolapse and pelvic floor disorders in women requires a thorough preoperative assessment of symptoms, degree of bother, and goals and expectations. Symptom assessment should include questions about vaginal, urinary, bowel, and sexual symptoms. Physical examination enables the pelvic surgeon to identify prolapse in each vaginal compartment (anterior, middle/apical, and posterior) and to plan for optimal surgical correction. Concurrent defecatory complaints must be assessed preoperatively, and collaboration with a colorectal surgeon will help to optimize patient care and improve patient satisfaction. Occult stress urinary incontinence in continent patients should be assessed by reducing their prolapse to allow proper surgical planning for any added sling procedure. Many patients with pelvic organ prolapse can develop de novo postoperative incontinence, which can be a significant cause of dissatisfaction with their prolapse repair. ■

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